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Remarks

In view of the following discussion, the applicants submit that none of the claims now pending in the application are anticipated under the provisions of 35 U. S. C. § 102, or obvious under the provisions of 35 U. S. C. § 103. Thus, the applicants believe that all of these claims are in allowable form.

OBJECTIONS

A. Specification

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The Examiner objects to the Title of the invention as not being descriptive. The applicants have rewritten the title of the invention to recite that the optical recording media is scanned using differential phase detection. In view of this amendment to the title of the invention, the basis for the Examiner's objection to the specification has been removed. Therefore, it is respectfully requested that this objection be withdrawn.

REJECTIONS

A. 35 U. S. C. § 102

1. Claims 1-10, 13 and 16-17 are not anticipated by Yasuaki

✓ Claims 1-10, 13 and 16-17 stand rejected under 35 U. S. C. § 102(e) as being anticipated by Yasuaki (Japanese Patent Application 10-124890 published May 15, 1998). The applicants submit that these claims are not anticipated by this reference.

Claim 1 is directed to an apparatus for reading from or writing to optical recording media (see, specification at page 1, lines 7-11). The apparatus

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includes a photodetector 10, a phase forming unit 13, an edge sequence detector 14 and a signal blocking unit 15 (see, FIG. 1 and the specification at page 8, line 6 to page 9, line 16). The photodetector 10 includes at least two detector elements 10A, 10B, 10C, 10D (see, FIG. 1 and the specification at page 8, lines 23-32). The phase forming unit 13 detects a phase difference between output signals of the photodetector 10 (see, specification at page 9, lines 2-4). The edge sequence detector 14 detects a sequence of edges of the output signals of the photodetector (see, specification at page 9, lines 4-8). The signal blocking unit 15, in response to the edge sequence detector 14, blocks output signals of the phase forming unit 13, when an impermissible sequence of edges is detected (see, specification at page 9, lines 8-16).

Yasuaki describes a tracking signal detector (see, Yasuaki In Abstract, Problem to be Solved, lines 1-2). In Yasuaki, a tracking error signal is muted based exclusively on how a phase difference relates to a set of time threshold values T2, T3 (see, Yasuaki in Abstract, Solution, lines 1-9).

Yasuaki does not describe or suggest an apparatus for reading from or writing to optical recording media including a photodetector having at least two detector elements, a phase forming unit for detecting a phase difference between output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output signals of the photodetector and a signal blocking unit that, in response to the edge sequence detector, blocks output signals of the phase forming unit when an impermissible sequence of edges is detected. Rather, Yasuaki teaches a completely different arrangement in which tracking error signals are muted based exclusively on how phase differences relate to a set of time threshold values. Since Yasuaki does not teach an apparatus for reading from or writing to optical recording media including a photodetector having at least two detector elements, a phase forming unit for detecting a phase difference between output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output signals of the photodetector and a signal blocking unit that, in response to the edge

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sequence detector, blocks output signals of the phase forming unit when an impermissible sequence of edges is detected, claim 1 is patentable over Yasuaki.

Independent claim 10 recites the same subject matter as claim 1 except as a method. In view of the above, the applicants submit that claim 10 is patentable over Yasuaki.

Claims 2-9, 13 and 16-17 depend directly, or indirectly from claims 1 or 10. In view of such dependence on claims 1 or 10, the applicants submit that claims 2-9, 13 and 16-17 are also patentable over Yasuaki.

2. Claims 1-10, 13 and 17 are not anticipated by Koji

Claims 1-10, 13 and 17 stand rejected under 35 U. S. C. § 102(a) as being anticipated by Koji (Japanese Patent Application 10-208262 published August 7, 1998). The applicants submit that these claims are not anticipated by this reference.

Claim 1 is directed to an apparatus for reading from or writing to optical recording media (see, specification at page 1, lines 7-11). The apparatus includes a photodetector 10, a phase forming unit 13, an edge sequence detector 14 and a signal blocking unit 15 (see, FIG. 1 and the specification at page 8, line 6 to page 9, line 16). The photodetector 10 includes at least two detector elements 10A, 10B, 10C, 10D (see, FIG. 1 and the specification at page 8, lines 23-32). The phase forming unit 13 detects a phase difference between output signals of the photodetector 10 (see, specification at page 9, lines 2-4). The edge sequence detector 14 detects a sequence of edges of the output signals of the photodetector (see, specification at page 9, lines 4-8). The signal blocking unit 15, in response to the edge sequence detector 14, blocks output signals of the phase forming unit 13, when an impermissible sequence of edges is detected (see, specification at page 9, lines 8-16).

Koji describes a tracking signal detector (see, Koji in Abstract, Problem to be Solved, line 1). In Koji, a tracking error signal is detected based on whether a

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phase difference occurs within a prescribed time (see, Koji in Abstract, Solution, lines 1-9).

Koji does not describe or suggest an apparatus for reading from or writing to optical recording media including a photodetector having at least two detector elements, a phase forming unit for detecting a phase difference between output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output signals of the photodetector and a signal blocking unit that, in response to the edge sequence detector, blocks output signals of the phase forming unit when an impermissible sequence of edges is detected. Rather, Koji only teaches detecting a tracking error signal based on whether a phase difference occurs within a prescribed time. Since Koji does not teach an apparatus for reading from or writing to optical recording media including a photodetector having at least two detector elements, a phase forming unit for detecting a phase difference between output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output signals of the photodetector and a signal blocking unit that, in response to the edge sequence detector, blocks output signals of the phase forming unit when an impermissible sequence of edges is detected, claim 1 is patentable over Koji.

Independent claim 10 recites the same subject matter as claim 1 except as a method. In view of the above, the applicants submit that claim 10 is patentable over Koji.

Claims 2-9, 13 and 17 depend directly, or indirectly from claims 1 or 10. In view of such dependence on claims 1 or 10, the applicants submit that claims 2-9, 13 and 17 are also patentable over Koji.

3. Claims 1-10, 13 and 17 are not anticipated by Shiyuuichi

Claims 1-10, 13 and 17 stand rejected under 35 U. S. C. § 102(a) as being anticipated by Shiyuuichi (Japanese Patent Application 10-198981 published July

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31, 1998). The applicants submit that these claims are not anticipated by this reference.

Claim 1 is directed to an apparatus for reading from or writing to optical recording media (see, specification at page 1, lines 7-11). The apparatus includes a photodetector 10, a phase forming unit 13, an edge sequence detector 14 and a signal blocking unit 15 (see, FIG. 1 and the specification at page 8, line 6 to page 9, line 16). The photodetector 10 includes at least two detector elements 10A, 10B, 10C, 10D (see, FIG. 1 and the specification at page 8, lines 23-32). The phase forming unit 13 detects a phase difference between output signals of the photodetector 10 (see, specification at page 9, lines 2-4). The edge sequence detector 14 detects a sequence of edges of the output signals of the photodetector (see, specification at page 9, lines 4-8). The signal blocking unit 15, in response to the edge sequence detector 14, blocks output signals of the phase forming unit 13, when an impermissible sequence of edges is detected (see, specification at page 9, lines 8-16).

Shiyuuichi describes a tracking signal detector (see, Shiyuuichi in Abstract, Problem to be Solved, lines 1-3). In Shiyuuichi, the time sequence of a single signal checked for 3T and 4T signals (see, Shiyuuichi in Abstract, Solution, lines 1-7). The tracking signal is annulled when 3T and 4T signals with low signal-to-noise ratios are detected (see, Shiyuuichi in Abstract, Solution, lines 7-10).

Shiyuuichi does not describe or suggest an apparatus for reading from or writing to optical recording media including a photodetector having at least two detector elements, a phase forming unit for detecting a phase difference between output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output signals of the photodetector and a signal blocking unit that, in response to the edge sequence detector, blocks output signals of the phase forming unit when an impermissible sequence of edges is detected. Rather, Shiyuuichi only teaches checking the timing sequence of a single signal for 3T and 4T signals and annulling the tracking signal when 3T and

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4T signals with low signal-to-noise ratios are detected. Since Shiyuuichi does not teach an apparatus for reading from or writing to optical recording media including a photodetector having at least two detector elements, a phase forming unit for detecting a phase difference between output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output signals of the photodetector and a signal blocking unit that, in response to the edge sequence detector, blocks output signals of the phase forming unit when an impermissible sequence of edges is detected, claim 1 is patentable over Shiyuuichi.

Independent claim 10 recites the same subject matter as claim 1 except as a method. In view of the above, the applicants submit that claim 10 is patentable over Shiyuuichi.

Claims 2-9, 13 and 17 depend directly, or indirectly from claims 1 or 10. In view of such dependence on claims 1 or 10, the applicants submit that claims 2-9, 13 and 17 are also patentable over Shiyuuichi.

4. Claims 1-3, 6, 9-10 and 17 are not anticipated by Kuribayashi

Claims 1-3, 6, 9-10 and 17 stand rejected under 35 U. S. C. § 102(e) as being anticipated by Kuribayashi (U. S. Patent 6,317,396 issued November 13, 2001). The applicants submit that these claims are not anticipated by this reference.

Claim 1 is directed to an apparatus for reading from or writing to optical recording media (see, specification at page 1, lines 7-11). The apparatus includes a photodetector 10, a phase forming unit 13, an edge sequence detector 14 and a signal blocking unit 15 (see, FIG. 1 and the specification at page 8, line 6 to page 9, line 16). The photodetector 10 includes at least two detector elements 10A, 10B, 10C, 10D (see, FIG. 1 and the specification at page 8, lines 23-32). The phase forming unit 13 detects a phase difference between output signals of the photodetector 10 (see, specification at page 9, lines 2-4). The edge

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sequence detector 14 detects a sequence of edges of the output signals of the photodetector (see, specification at page 9, lines 4-8). The signal blocking unit 15, in response to the edge sequence detector 14, blocks output signals of the phase forming unit 13, when an impermissible sequence of edges is detected (see, specification at page 9, lines 8-16).

Kuribayashi describes a tracking error generating device (see, Kuribayashi at column 1, lines 5-8). In Kuribayashi, evaluation target signals processed from light receiving element output signals are individually checked for amplitude or line width (see, Kuribayashi at column 2, lines 48-67).

Kuribayashi does not describe or suggest an apparatus for reading from or writing to optical recording media including a photodetector having at least two detector elements, a phase forming unit for detecting a phase difference between output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output signals of the photodetector and a signal blocking unit that, in response to the edge sequence detector, blocks output signals of the phase forming unit when an impermissible sequence of edges is detected. Rather, Kuribayashi teaches a completely different arrangement in which tracking error signals are detected based on evaluation target signals processed from light receiving element output signals that are individually checked for amplitude or line width. Since Kuribayashi does not teach an apparatus for reading from or writing to optical recording media including a photodetector having at least two detector elements, a phase forming unit for detecting a phase difference between output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output signals of the photodetector and a signal blocking unit that, in response to the edge sequence detector, blocks output signals of the phase forming unit when an impermissible sequence of edges is detected, claim 1 is patentable over Kuribayashi.

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Independent claim 10 recites the same subject matter as claim 1 except as a method. In view of the above, the applicants submit that claim 10 is patentable over Kuribayashi.

Claims 2-3, 6, 9 and 17 depend directly, or indirectly from claims 1 or 10. In view of such dependence on claims 1 or 10, the applicants submit that claims 2-3, 6, 9 and 17 are also patentable over Kuribayashi.

B. 35 U. S. C. § 103

1. Claims 14-15 are not obvious over Yasuaki, or Koji, or Shiyuuichi in view of Maki

Claims 14-15 stand rejected under 35 U. S. C. § 103(a) as being obvious over Yasuaki (Japanese Patent Application 10-124890 published May 15, 1998), or Koji (Japanese Patent Application 10-208262 published August 7, 1998), or Shiyuuichi (Japanese Patent Application 10-198981 published July 31, 1998) in view of Maki (Japanese Patent Application 06-343039 published December 13, 1994). The applicants submit that these claims are not rendered obvious by the combination of these references.

Claims 14-15 depend from claim 10 that is directed to an apparatus for reading from or writing to optical recording media (see, specification at page 1, lines 7-11). The apparatus includes a photodetector 10, a phase forming unit 13, an edge sequence detector 14 and a signal blocking unit 15 (see, FIG. 1 and the specification at page 8, line 6 to page 9, line 16). The photodetector 10 includes at least two detector elements 10A, 10B, 10C, 10D (see, FIG. 1 and the specification at page 8, lines 23-32). The phase forming unit 13 detects a phase difference between output signals of the photodetector 10 (see, specification at page 9, lines 2-4). The edge sequence detector 14 detects a sequence of edges of the output signals of the photodetector (see, specification at page 9, lines 4-8). The signal blocking unit 15, in response to the edge sequence detector 14,



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blocks output signals of the phase forming unit 13, when an impermissible sequence of edges is detected (see, specification at page 9, lines 8-16).

Yasuaki describes a tracking signal detector (see, Yasuaki In Abstract, Problem to be Solved, lines 1-2). In Yasuaki, a tracking error signal is muted based exclusively on how a phase difference relates to a set of time threshold values T2, T3 (see, Yasuaki in Abstract, Solution, lines 1-9).

Yasuaki does not describe or suggest an apparatus for reading from or writing to optical recording media including a photodetector having at least two detector elements, a phase forming unit for detecting a phase difference between output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output signals of the photodetector and a signal blocking unit that, in response to the edge sequence detector, blocks output signals of the phase forming unit when an impermissible sequence of edges is detected. Rather, Yasuaki teaches a completely different arrangement in which tracking error signals are muted based exclusively on how phase differences relate to a set of time threshold values. Since Yasuaki does not teach an apparatus for reading from or writing to optical recording media including a photodetector having at least two detector elements, a phase forming unit for detecting a phase difference between output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output signals of the photodetector and a signal blocking unit that, in response to the edge sequence detector, blocks output signals of the phase forming unit when an impermissible sequence of edges is detected, claims 14-15 are patentable over Yasuaki.

Koji describes a tracking signal detector (see, Koji in Abstract, Problem to be Solved, line 1). In Koji, a tracking error signal is detected based on whether a phase difference occurs within a prescribed time (see, Koji in Abstract, Solution, lines 1-9).

Koji does not describe or suggest an apparatus for reading from or writing to optical recording media including a photodetector having at least two detector

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elements, a phase forming unit for detecting a phase difference between output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output signals of the photodetector and a signal blocking unit that, in response to the edge sequence detector, blocks output signals of the phase forming unit when an impermissible sequence of edges is detected. Rather, Koji only teaches detecting a tracking error signal based on whether a phase difference occurs within a prescribed time. Since Koji does not teach an apparatus for reading from or writing to optical recording media including a photodetector having at least two detector elements, a phase forming unit for detecting a phase difference between output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output signals of the photodetector and a signal blocking unit that, in response to the edge sequence detector, blocks output signals of the phase forming unit when an impermissible sequence of edges is detected, claims 14-15 are patentable over Koji.

Shiyuuichi describes a tracking signal detector (see, Shiyuuichi in Abstract, Problem to be Solved, lines 1-3). In Shiyuuichi, the time sequence of a single signal checked for 3T and 4T signals (see, Shiyuuichi in Abstract, Solution, lines 1-7). The tracking signal is annulled when 3T and 4T signals with low signal-to-noise ratios are detected (see, Shiyuuichi in Abstract, Solution, lines 7-10).

Shiyuuichi does not describe or suggest an apparatus for reading from or writing to optical recording media including a photodetector having at least two detector elements, a phase forming unit for detecting a phase difference between output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output signals of the photodetector and a signal blocking unit that, in response to the edge sequence detector, blocks output signals of the phase forming unit when an impermissible sequence of edges is detected. Rather, Shiyuuichi only teaches checking the timing sequence of a single signal for 3T and 4T signals and annulling the tracking signal when 3T and

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4T signals with low signal-to-noise ratios are detected. Since Shiyuuichi does not teach an apparatus for reading from or writing to optical recording media including a photodetector having at least two detector elements, a phase forming unit for detecting a phase difference between output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output signals of the photodetector and a signal blocking unit that, in response to the edge sequence detector, blocks output signals of the phase forming unit when an impermissible sequence of edges is detected, claims 14-15 are patentable over Shiyuuichi.

Maki describes a phase detecting circuit (see, Maki in Abstract, Problem to be Solved, line 1).

Maki does not describe or suggest an apparatus for reading from or writing to optical recording media including a photodetector having at least two detector elements, a phase forming unit for detecting a phase difference between output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output signals of the photodetector and a signal blocking unit that, in response to the edge sequence detector, blocks output signals of the phase forming unit when an impermissible sequence of edges is detected. Rather, Maki only teaches a phase detecting circuit. Since Maki does not teach an apparatus for reading from or writing to optical recording media including a photodetector having at least two detector elements, a phase forming unit for detecting a phase difference between output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output signals of the photodetector and a signal blocking unit that, in response to the edge sequence detector, blocks output signals of the phase forming unit when an impermissible sequence of edges is detected, claims 14-15 are patentable over Maki.

Further, since Yasuaki only teaches muting tracking error signals based on how phase differences relate to a set of time threshold values, or Koji only teaches detecting a tracking error signal based on whether a phase difference

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occurs within a prescribed time, or Shiyuuichi only teaches checking the timing sequence of a single signal for 3T and 4T signals and annulling the tracking signal when 3T and 4T signals with low signal-to-noise ratios are detected and Maki only teaches a phase detecting circuit, the combination of these references does not describe or suggest applicant's arrangement recited in claims 14-15. In particular, claims 14-15 recite an apparatus for reading from or writing to optical recording media including a photodetector having at least two detector elements, a phase forming unit for detecting a phase difference between output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output signals of the photodetector and a signal blocking unit that, in response to the edge sequence detector, blocks output signals of the phase forming unit when an impermissible sequence of edges is detected. Thus, claims 14-15 are patentable over the combination of these references.

2. Claims 11-12 are not obvious over Yasuaki, or Koji, or Shiyuuichi in view of Kuribayashi

Claims 11-12 stand rejected under 35 U. S. C. § 103(a) as being obvious over Yasuaki (Japanese Patent Application 10-124890 published May 15, 1998), or Koji (Japanese Patent Application 10-208262 published August 7, 1998), or Shiyuuichi (Japanese Patent Application 10-198981 published July 31, 1998) in view of Kuribayashi (U. S. Patent 6,317,396 issued November 13, 2001). The applicants submit that these claims are not rendered obvious by the combination of these references.

Claims 11-12 depend from claim 10 that is directed to an apparatus for reading from or writing to optical recording media (see, specification at page 1, lines 7-11). The apparatus includes a photodetector 10, a phase forming unit 13, an edge sequence detector 14 and a signal blocking unit 15 (see, FIG. 1 and the specification at page 8, line 6 to page 9, line 16). The photodetector 10 includes at least two detector elements 10A, 10B, 10C, 10D (see, FIG. 1 and the

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specification at page 8, lines 23-32). The phase forming unit 13 detects a phase difference between output signals of the photodetector 10 (see, specification at page 9, lines 2-4). The edge sequence detector 14 detects a sequence of edges of the output signals of the photodetector (see, specification at page 9, lines 4-8). The signal blocking unit 15, in response to the edge sequence detector 14, blocks output signals of the phase forming unit 13, when an impermissible sequence of edges is detected (see, specification at page 9, lines 8-16).

Yasuaki describes a tracking signal detector (see, Yasuaki in Abstract, Problem to be Solved, lines 1-2). In Yasuaki, a tracking error signal is muted based exclusively on how a phase difference relates to a set of time threshold values T2, T3 (see, Yasuaki in Abstract, Solution, lines 1-9).

Yasuaki does not describe or suggest an apparatus for reading from or writing to optical recording media including a photodetector having at least two detector elements, a phase forming unit for detecting a phase difference between output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output signals of the photodetector and a signal blocking unit that, in response to the edge sequence detector, blocks output signals of the phase forming unit when an impermissible sequence of edges is detected. Rather, Yasuaki teaches a completely different arrangement in which tracking error signals are muted based exclusively on how phase differences relate to a set of time threshold values. Since Yasuaki does not teach an apparatus for reading from or writing to optical recording media including a photodetector having at least two detector elements, a phase forming unit for detecting a phase difference between output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output signals of the photodetector and a signal blocking unit that, in response to the edge sequence detector, blocks output signals of the phase forming unit when an impermissible sequence of edges is detected, claims 11-12 are patentable over Yasuaki.

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Koji describes a tracking signal detector (see, Koji in Abstract, Problem to be Solved, line 1). In Koji, a tracking error signal is detected based on whether a phase difference occurs within a prescribed time (see, Koji in Abstract, Solution, lines 1-9).

Koji does not describe or suggest an apparatus for reading from or writing to optical recording media including a photodetector having at least two detector elements, a phase forming unit for detecting a phase difference between output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output signals of the photodetector and a signal blocking unit that, in response to the edge sequence detector, blocks output signals of the phase forming unit when an impermissible sequence of edges is detected. Rather, Koji only teaches detecting a tracking error signal based on whether a phase difference occurs within a prescribed time. Since Koji does not teach an apparatus for reading from or writing to optical recording media including a photodetector having at least two detector elements, a phase forming unit for detecting a phase difference between output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output signals of the photodetector and a signal blocking unit that, in response to the edge sequence detector, blocks output signals of the phase forming unit when an impermissible sequence of edges is detected, claims 11-12 are patentable over Koji.

Shiyuuichi describes a tracking signal detector (see, Shiyuuichi in Abstract, Problem to be Solved, lines 1-3). In Shiyuuichi, the time sequence of a single signal checked for 3T and 4T signals (see, Shiyuuichi in Abstract, Solution, lines 1-7). The tracking signal is annulled when 3T and 4T signals with low signal-to-noise ratios are detected (see, Shiyuuichi in Abstract, Solution, lines 7-10).

Shiyuuichi does not describe or suggest an apparatus for reading from or writing to optical recording media including a photodetector having at least two detector elements, a phase forming unit for detecting a phase difference between

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output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output signals of the photodetector and a signal blocking unit that, in response to the edge sequence detector, blocks output signals of the phase forming unit when an impermissible sequence of edges is detected. Rather, Shiyuuichi only teaches checking the timing sequence of a single signal for 3T and 4T signals and annulling the tracking signal when 3T and 4T signals with low signal-to-noise ratios are detected. Since Shiyuuichi does not teach an apparatus for reading from or writing to optical recording media including a photodetector having at least two detector elements, a phase forming unit for detecting a phase difference between output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output signals of the photodetector and a signal blocking unit that, in response to the edge sequence detector, blocks output signals of the phase forming unit when an impermissible sequence of edges is detected, claims 11-12 are patentable over Shiyuuichi.

Kuribayashi describes a tracking error generating device (see, Kuribayashi at column 1, lines 5-8). In Kuribayashi, evaluation target signals processed from light receiving element output signals are individually checked for amplitude or line width (see, Kuribayashi at column 2, lines 48-67).

Kuribayashi does not describe or suggest an apparatus for reading from or writing to optical recording media including a photodetector having at least two detector elements, a phase forming unit for detecting a phase difference between output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output signals of the photodetector and a signal blocking unit that, in response to the edge sequence detector, blocks output signals of the phase forming unit when an impermissible sequence of edges is detected. Rather, Kuribayashi teaches a completely different arrangement in which tracking error signals are detected based on evaluation target signals processed from light receiving element output signals that are individually checked for amplitude or line width. Since Kuribayashi does not teach an

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apparatus for reading from or writing to optical recording media including a photodetector having at least two detector elements, a phase forming unit for detecting a phase difference between output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output signals of the photodetector and a signal blocking unit that, in response to the edge sequence detector, blocks output signals of the phase forming unit when an impermissible sequence of edges is detected, claims 11-12 are patentable over Kuribayashi.

Further, since Yasuaki only teaches muting tracking error signals based on how phase differences relate to a set of time threshold values, or Koji only teaches detecting a tracking error signal based on whether a phase difference occurs within a prescribed time, or Shiyuuichi only teaches checking the timing sequence of a single signal for 3T and 4T signals and annulling the tracking signal when 3T and 4T signals with low signal-to-noise ratios are detected and Kuribayashi only teaches detecting tracking error signals based on evaluation target signals processed from light receiving element output signals that are individually checked for amplitude or line width, the combination of these references does not describe or suggest applicant's arrangement recited in claims 11-12. In particular, claims 11-12 recite an apparatus for reading from or writing to optical recording media including a photodetector having at least two detector elements, a phase forming unit for detecting a phase difference between output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output signals of the photodetector and a signal blocking unit that, in response to the edge sequence detector, blocks output signals of the phase forming unit when an impermissible sequence of edges is detected. Thus, claims 11-12 are patentable over the combination of these references.



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3. Claims 11-12 are not obvious over Kuribayashi in view of Koji

Claims 11-12 stand rejected under 35 U. S. C. § 103(a) as being obvious over Kurlbayashi (U. S. Patent 6,317,396 issued November 13, 2001) in view of Koji (Japanese Patent Application 10-208262 published August 7, 1998). The applicants submit that these claims are not rendered obvious by the combination of these references.

Claims 11-12 depend from claim 10 that is directed to an apparatus for reading from or writing to optical recording media (see, specification at page 1, lines 7-11). The apparatus includes a photodetector 10, a phase forming unit 13, an edge sequence detector 14 and a signal blocking unit 15 (see, FIG. 1 and the specification at page 8, line 6 to page 9, line 16). The photodetector 10 includes at least two detector elements 10A, 10B, 10C, 10D (see, FIG. 1 and the specification at page 8, lines 23-32). The phase forming unit 13 detects a phase difference between output signals of the photodetector 10 (see, specification at page 9, lines 2-4). The edge sequence detector 14 detects a sequence of edges of the output signals of the photodetector (see, specification at page 9, lines 4-8). The signal blocking unit 15, in response to the edge sequence detector 14, blocks output signals of the phase forming unit 13, when an impermissible sequence of edges is detected (see, specification at page 9, lines 8-16).

Kuribayashi describes a tracking error generating device (see, Kuribayashi at column 1, lines 5-8). In Kuribayashi, evaluation target signals processed from light receiving element output signals are individually checked for amplitude or line width (see, Kuribayashi at column 2, lines 48-67).

Kurlbayashi does not describe or suggest an apparatus for reading from or writing to optical recording media including a photodetector having at least two detector elements, a phase forming unit for detecting a phase difference between output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output signals of the photodetector and a signal blocking unit that, in response to the edge sequence detector, blocks output

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signals of the phase forming unit when an impermissible sequence of edges is detected. Rather, Kuribayashi teaches a completely different arrangement in which tracking error signals are detected based on evaluation target signals processed from light receiving element output signals that are individually checked for amplitude or line width. Since Kuribayashi does not teach an apparatus for reading from or writing to optical recording media including a photodetector having at least two detector elements, a phase forming unit for detecting a phase difference between output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output signals of the photodetector and a signal blocking unit that, in response to the edge sequence detector, blocks output signals of the phase forming unit when an impermissible sequence of edges is detected, claims 11-12 are patentable over Kuribayashi.

Koji describes a tracking signal detector (see, Koji in Abstract, Problem to be Solved, line 1). In Koji, a tracking error signal is detected based on whether a phase difference occurs within a prescribed time (see, Koji in Abstract, Solution, lines 1-9).

Koji does not describe or suggest an apparatus for reading from or writing to optical recording media including a photodetector having at least two detector elements, a phase forming unit for detecting a phase difference between output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output signals of the photodetector and a signal blocking unit that, in response to the edge sequence detector, blocks output signals of the phase forming unit when an impermissible sequence of edges is detected. Rather, Koji only teaches detecting a tracking error signal based on whether a phase difference occurs within a prescribed time. Since Koji does not teach an apparatus for reading from or writing to optical recording media including a photodetector having at least two detector elements, a phase forming unit for detecting a phase difference between output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output

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signals of the photodetector and a signal blocking unit that, in response to the edge sequence detector, blocks output signals of the phase forming unit when an impermissible sequence of edges is detected, claims 11-12 are patentable over Koji.

Further, since Kuribayashi only teaches detecting tracking error signals based on evaluation target signals processed from light receiving element output signals that are individually checked for amplitude or line width and Koji only teaches detecting a tracking error signal based on whether a phase difference occurs within a prescribed time, the combination of these references does not describe or suggest applicant's arrangement recited in claims 11-12. In particular, claims 11-12 recite an apparatus for reading from or writing to optical recording media including a photodetector having at least two detector elements, a phase forming unit for detecting a phase difference between output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output signals of the photodetector and a signal blocking unit that, in response to the edge sequence detector, blocks output signals of the phase forming unit when an impermissible sequence of edges is detected. Thus, claims 11-12 are patentable over the combination of these references.

#### CONCLUSION

Thus, the applicants submit that none of the claims presently in the application are anticipated under the provisions of 35 U. S. C. § 102, or obvious under the provisions of 35 U. S. C. § 103. Consequently, the applicants believe that all of the claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

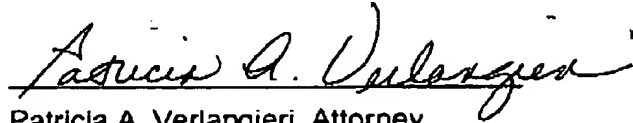
If, however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone Ms. Patricia A. Verlangieri, at (609)

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734-6867, so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,



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